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ABSTRACT

This report summarizes the results of three studies concerning the Reading Recovery or Descubriendo la Lectura program with first-grade California students. Studies were conducted using state-wide data obtained during 1993-94 programs to determine if the program was an effective intervention for children with difficulty in learning to read. The three groups of children were English-only speakers, Spanish-only speakers, and non-English speaking children learning English using the program. Children were selected from the lowest 20 percent of first-grade classrooms in combination with teacher recommendations and results on three of six sub-tasks on Clays' Observation Survey: writing vocabulary, hearing and recording sounds in words, and text reading. Children were surveyed at the beginning and end of the program. Results indicated that 76 percent of children reached the average reading level and were discontinued from the program; average number of lessons needed was approximately 65 days. Of the three sub-tasks, greatest continued growth was found in the children's ability to read continuous text as measured by the text reading sub-task. It was concluded that the program was a useful and successful short-term intervention for these populations of first-graders at risk. (Contains 16 references.) (NAV)

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Progress of First and Second Language Learners in an Early Intervention Program

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presented to the
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Program Overview

Reading Recovery® is an early literacy intervention program designed to help the lowest achieving first-grade children achieve accelerated progress by developing productive strategies for reading so that they are able to perform at a level of the average readers in their classrooms and to profit from classroom instruction. The aim of Reading Recovery intervention is to help children become independent readers with internal self-extending systems for further literacy learning (Clay, 1989, 1993b; Pinnell, Fried, Estice, 1990).

Three key components of Reading Recovery are integral to the success of the program:

1. A program for children of daily, 30-minute one-on-one instruction by specially trained teachers for approximately 12-18 weeks;

2. A program of professional development for educators whereby they are trained in the practice and theory of literacy acquisition through an intense year-long graduate course of study;

3. A research program which continuously monitors program results and provides support for the work of participating teachers and schools.

Program History

Reading Recovery was developed by Dr. Marie M. Clay, a New Zealand educator and psychologist. During the mid-1960's, Dr. Clay conducted observational research that enabled her to design techniques for detecting reading difficulties of young children. In the mid-1970's, she developed Reading Recovery procedures with teachers and tested the program in New Zealand (Clay, 1979). The success of the pilot program resulted in the nationwide adoption of Reading Recovery in New Zealand in 1979.

The success of the program led to program initiatives in Australia and the United States. In 1984-85, Dr. Clay and Dr. Barbara Watson, National Director of Reading Recovery in New Zealand, were invited to train the first Reading Recovery teachers, teacher leaders, and trainers of teacher leaders in the United States in a year-long pilot program at The Ohio State University. Children were served with Reading Recovery intervention in that initial year in six Columbus, Ohio, public schools. Since that time, Reading Recovery has been adopted in 49 states and the District of Columbia. Internationally, Reading Recovery also has been adopted by Canada and Great Britain. During the 1993-94 school year, approximately 60,000 children in North America were served by Reading Recovery educators (The Ohio State University, 1994).

Reading Recovery in California

In 1990-91, the California Department of Education held meetings throughout the state to encourage interest in early literacy intervention approaches. At the same time, efforts to establish a training site for Reading Recovery were underway at California State University, San Bernardino, in collaboration with local county offices of education. This university-county collaboration resulted in the hiring of an experienced teacher leader from Ohio who initiated

teacher training during the 1991-92 school year. At the same time, three other teacher leaders were hired to initiate training classes in other counties in the state.

Subsequently, CSU San Bernardino developed a statewide implementation plan through funding from the Compensatory Education Office of the California State Department of Education in order to bring Gay Su Pinnell of The Ohio State University to California as a visiting professor. During 1992-93, Dr. Pinnell trained four trainers from three universities and eleven teachers leaders from school districts throughout the state. Since the initial year of Reading Recovery in California, the program has expanded quickly throughout the state. Three University Regional Training Centers at CSU San Bernardino, CSU Fresno, and Saint Mary's College in Moraga have trained 45 teacher leaders and one trainer of teacher leaders. As a result, in 1993-94, 873 teachers served 5,273 children in California; in the current year, over 13,000 children are being served by more than 1600 teachers (Swartz, Klein, Kelly, Shook, & Hoffman, 1994).

In 1993-94, training in Reading Recovery in Spanish, or Descubriendo la Lectura (DLL), was initiated in California. This reconstruction of Reading Recovery in Spanish (see Escamilla, 1994) offers the same intensive literacy intervention to eligible first-grade children who are receiving their literacy instruction in their native language, Spanish. With all implementations of Reading Recovery and Descubriendo la Lectura, data is collected and analyzed annually for all children served. (See The Ohio State University, 1994.)

Research Questions

Three studies were completed utilizing state-wide data which was obtained for all children served in Reading Recovery and Descubriendo la Lectura during 1993-94 in California. The purpose of the studies described herein was to determine if Reading Recovery and Descubriendo la Lectura are effective interventions for three groups of children experiencing difficulty learning to read in first-grade classrooms in California, as determined by growth from pre- to post-assessment results on three measures of the Observation Survey. The three groups of children for whom data were analyzed were:

- English-only speaking children in Reading Recovery;
- Spanish-only speaking children in Descubriendo la Lectura;
- English Language Learners in Reading Recovery. English Language Learners are children designated as acquiring English as a second language concomitantly with developing literacy in English through instruction provided in English-speaking classrooms. Literacy instruction in their native language, therefore, was not available to them in their schools.

To determine if the programs Reading Recovery/Descubriendo la Lectura are effective as literacy interventions, "effective" was defined in terms of gains on three measures (see below) of the Observation Survey; the proportion of children receiving full programs who "discontinued" from the programs; the subsequent progress of children for whom the programs were discontinued before April 1; and, the end-of-year progress of children in Reading Recovery/Descubriendo la Lectura as they compared to random samples of first-grade children. These criteria to determine if Reading Recovery/Descubriendo la Lectura are effective interventions are reflected in the following research questions:

Study One:

1. What gains are made by English-only speaking children served in Reading Recovery who receive a full program of intervention? *(Please note: Many research studies have validated the efficacy of Reading Recovery for English speakers. See: Askew, Frasier, & Griffin, 1993; Frater & Staniland, 1994; National Diffusion Network, 1993; The Ohio State University, 1994; Pinnell, Lyons, DeFord, Bryk, & Seltzer, 1994. Data analyzed to address Research Question 1 in this study serve to confirm the successful replication of Reading Recovery implementation in California.)*

2. How do "successfully discontinued" Reading Recovery/Descubriendo la Lectura children from all three groups compare to their peers at the end of first grade?

Study Two:

3. Are Spanish-speaking students receiving instruction in Reading Recovery in Spanish/ Descubriendo la Lectura discontinuing at a rate comparable to other students receiving Reading Recovery instruction?

4. Are Spanish-speaking students receiving instruction in Descubriendo la Lectura being discontinued with comparable gains as students who discontinue from Reading Recovery instruction?

Study Three:

5. Are English Language Learners receiving Reading Recovery instruction discontinuing at a rate comparable to students for whom English is their first language?

6. Are English Language Learners being discontinued from Reading Recovery with comparable gains as students discontinued from Reading Recovery for whom English is their first language?

Data Source and Methodology

In 1993-94, a total of 5273 children received Reading Recovery and Descubriendo la Lectura instruction in California: 3621 children were native English speakers; 2419 of these children received full programs of intervention (designated "program children"). Of the total children served in English Reading Recovery, 1409 children were identified by their districts as English language learners; 885 of these children received full programs of intervention. A total of 243 children were served in Descubriendo la Lectura; 165 of these children received full programs of intervention.

(A "full program of intervention" denotes a minimum of 60 lessons received or successful exit from the program at the average level of other first-grade children. That is, many children do not require 60 lessons to achieve accelerated progress; if they "discontinue" from the program prior to 60 lessons, they are deemed "program children" in that they have received a full program as required for their acquisition of literacy abilities. Hence, "program children" are children who received 60 or more lessons or who successfully discontinued from the program.)

Children were selected from the lowest 20% of first-grade classrooms in schools where Reading Recovery was being implemented; a combination of teacher recommendation and results on Clay's Observation Survey (Clay, 1993a) was used to identify the lowest achieving children. English Language Learners were deemed eligible for selection into Reading Recovery if their English language proficiency was sufficient for them to understand the directions and required tasks of the Observation Survey. Every child selected for Reading Recovery intervention was administered the Observation Survey (Clay, 1993a) upon entry to the program. Children received consistent tutorial instruction over an average of 17 weeks. Reading Recovery teachers monitored children's progress on the basis of daily observations and successful reading of progressively more difficult continuous text.

At the time of children's "discontinuing" from the program, each child was reassessed with the Observation Survey to determine over-all progress. Discontinuing testing was conducted by a teacher trained in administering the Observation Survey but who was not the child's Reading Recovery/Descubriendo la Lectura teacher. In order for decisions to be made to discontinue the program for children who achieved accelerated progress, their scores on the Observation Survey had to fall within the average range for first-grade students in their school. In addition, criteria related to observable behaviors indicative of a self-extending system of literacy learning (Clay, 1989, 1993b) also were applied to each individual for whom program discontinuation was

considered. Decisions to "discontinue" children from the programs were a joint decision between two or more teachers and were supervised by certified Reading Recovery/Descubriendo la Lectura Teacher Leaders.

Children discontinued from Reading Recovery/Descubriendo la Lectura prior to April 1 were re-assessed at the end of the year to determine subsequent growth after discontinuation; that is, specific data was obtained about the continued progress they made in their classrooms without further tutorial intervention, from the time the program was discontinued to the end of the year. In addition, all children being served in Reading Recovery at the end of the school year were assessed with the Observation Survey to determine if they had achieved acceleration to the average of their classrooms.

An average band of achievement for first-grade children at the end of 1993-94 for the state of California was determined by assessing a random sample of 423 students in English-speaking classrooms throughout the state who received no Reading Recovery services but who were in schools where Reading Recovery was implemented. A second average band of achievement for first-grade children at the end of 1993-94 for the state of California was determined by assessing a random sample of 50 students in Spanish-speaking classrooms throughout the state who received no Descubriendo la Lectura services but who were in schools where DLL was implemented.

The effect size for both random sample groups is greater because the average bands were drawn from the first-grade population excluding the children who were initially designated as the lowest achieving students. End-of-year scores for Reading Recovery and Descubriendo la Lectura program children were compared to scores obtained from the random samples of students in English- and Spanish-speaking classrooms in California. (A random sample of only English Language Learners in Reading Recovery was not obtained. The random sample derived from English-speaking classrooms, including both native English-speakers and English Language Learners, was used for comparison with end-of-year scores for English Language Learners in Reading Recovery.)

For the purposes of these studies, scores for three of the six sub-tasks of the Observation Survey (Clay, 1993a) were examined. The Observation Survey is a measure of authentic literacy tasks that relate to children's literacy acquisition. Data for three of the sub-tasks were obtained: Writing Vocabulary, Hearing Sounds in Words (Dictation task), and Text Reading.

Writing Vocabulary is a measure of the number of words a child is able to write in ten minutes; performance on this sub-task indicates a child's visual memory for words learned in any setting. **Hearing (and recording) Sounds in Words** measures the child's ability to both hear and represent sounds in words; children's phonological awareness as it is indicated on tasks similar to this sub-task is a better predictor of the ease at which children will acquire literacy than any other indicator, including intelligence tests (Stanovich, 1993/94). The total possible raw score on the sub-task, Hearing Sounds in Words, is 37 for the English version of the Observation Survey and 39 for the Spanish version of the Observation Survey.

Text Reading is a measure of how well children can use strategies and cueing sources to read continuous text. It is a " . . . neutral observation task capable of use in any system of reading and recording progress on whatever gradient of text difficulty has been adopted by the education system (Clay, 1993b, p. 6)." In Reading Recovery/Descubriendo la Lectura, children's abilities to read continuous text are assessed on materials not previously seen and which are arranged along a gradient of difficulty from a Readiness level to a sixth-grade (basal) level of reading. The following grade-level equivalents are assigned to the Text Reading levels of assessment materials used in Reading Recovery/Descubriendo la Lectura:

Text Reading Score	Equivalent Basal Level	Text Reading Score	Equivalent Basal Level
0 - 2	Readiness	14 - 16	Grade 1
3 & 4	Pre-primer 1	18 - 20	Grade 2
5 & 6	Pre-primer 2	22 - 24	Grade 3
7 & 8	Pre-primer 3	26	Grade 4
9 - 12	Primer	28	Grade 5
		30	Grade 6

Text Reading scores reported in the Results section, below, will reflect the corresponding graded level of difficulty as indicated above.

Results

Study One: Research Questions 1 & 2

Research Question 1 established and analyzed the reading and writing progress of native English speakers in the Reading Recovery program. Of 3621 children served, 2419 children received a full program; 1789 children successfully exited ("discontinued") the program at the average level for first-graders in their schools, representing a 74% discontinuing rate.

Mean pre- and post-observation scores were analyzed for the three measures: **Writing Vocabulary, Hearing Sounds in Words**, and **Text Reading**. For the English speakers in Reading Recovery who discontinued, the mean for **Writing Vocabulary** increased from 8.35 (N=1773) in the fall, to 47.26 (N=1724) at discontinuing. This result is statistically significant at the $p<.0001$ level. For the English Reading Recovery not discontinued group, the mean for Writing Vocabulary increased from 2.35 (N=624) in the fall, to 29.13 (N=558) in the spring. This result is statistically significant at the $p<.0001$ level. For English Reading Recovery students who discontinued prior to April 1, the mean for Writing Vocabulary increased from 3.83 (N=701) in the fall, to 41.77 (N=728) at discontinuing; they subsequently progressed, without further intervention, to an end-of-year mean score of 49.49 (N=686).

For the English Reading Recovery discontinued group, the mean for **Hearing Sounds in Words** increased from 9.99 (N=1773) in the fall, to 34.33 (N=1723) at discontinuing. This result is statistically significant at the $p<.0001$ level. For the English Reading Recovery not discontinued group, the mean for Hearing Sounds in Words increased from 2.18 (N=624) in the fall, to 27.24 (N=556) in the spring. This result is statistically significant at the $p<.0001$ level. For English Reading Recovery students who discontinued prior to April 1, the mean for Hearing Sounds in Words increased from 5.28 (N=701) in the fall, to 34.15 (N=726) at discontinuing; they subsequently progressed, without further intervention, to an end-of-year mean score of 34.72 (N=687).

For the English Reading Recovery discontinued group, the mean for **Text Reading** increased from 1.19 (N=1772) in the fall, to 14.36 (N=1726) at discontinuing. This result is statistically significant at the $p<.0001$ level. For the English Reading Recovery not discontinued group, the mean for Text Reading increased from 0.42 (N=623) in the fall, to 5.63 (N=558) in the spring. This result also is significant at the $p<.0001$ level. For English Reading Recovery students who discontinued prior to April 1, the mean for Text Reading increased from 0.51 N=702) in the fall, to 11.49 (N=727) at discontinuing; they subsequently progressed, without further intervention, to an end-of-year mean score of 16.13 (N=689).

The means for number of lessons received by discontinued and not discontinued English Reading Recovery students were 62.76 (N=1788) and 85.58 (N=630) respectively.

For Research Question 2, data were analyzed for determining the reading progress of English-only speakers in the Reading Recovery program, Spanish-only speakers in the Descubriendo la Lectura program, and English Language Learners in the Reading Recovery

program, in comparison to the progress of their peers as indicated by the English or Spanish random sample. End-of-year Observation Survey scores were compared for each of the three groups of children with performance of random sample children on the three sub-tasks of the appropriate language version of the Observation Survey: Writing Vocabulary, Hearing Sounds in Words, and Text Reading.

For English-only speakers in Reading Recovery: The end-of-year mean scores on **Writing Vocabulary** were: for the discontinued group, 47.26 (N=1724); for the not discontinued group, 29.13 (N=558); and, for the English random sample, 42.02 (N=423). The end-of-year mean scores on **Hearing Sounds in Words** were: for the discontinued group, 34.43 (N=1723); for the not discontinued group, 27.24 (N=556); and, for the English random sample, 31.72 (N=424). The end-of-year mean scores on **Text Reading** were: for the discontinued group, 14.36 (N=1726); for the not discontinued group, 5.63 (N=558); and, for the English random sample, 13.79 (N=423).

For Spanish-only speakers in Descubriendo la Lectura: The end-of-year mean scores on **Writing Vocabulary** were: for the discontinued group, 38.20 (N=126); for the not discontinued group, 19.55 (N=33); and, for the Spanish random sample was, 29.04 (N=50). The end-of-year mean scores on **Hearing Sounds in Words** were: for the discontinued group, 36.87 (N=126); for the not discontinued group, 25.88 (N=33); and, for the Spanish random sample, 33.22 (N=50). The end-of-year mean scores on **Text Reading** were: for the discontinued group, 14.55 (N=126); for the not discontinued group, 5.03 (N=33); and, for the Spanish random sample, 10.32 (N=50).

For English Language Learners in Reading Recovery: The end-of-year mean scores on **Writing Vocabulary** were: for the discontinued group, 48.61 (N=647); for the not discontinued group, 30.95 (N=205); and, for the English random sample, 42.02 (N=423). The end-of-year mean scores on **Hearing Sounds in Words** were: for the discontinued group, 34.43 (N=647); for the not discontinued group, 27.74 (N=204); and, for the English random sample, 31.72 (N=424). The end-of-year mean scores on **Text Reading** were: for the discontinued group, 14.31 (N=648); for the not discontinued group, 5.43 (N=205); and, for the English random sample, 13.79 (N=423).

Study Two: Research Questions 3 & 4

For Research Question 3, data were analyzed to determine the discontinuing rate of total Reading Recovery program children (English-only speakers only) with the discontinuing rate of Spanish-only speakers in the Descubriendo la Lectura program. As part of this question, the number of lessons for children in the Reading Recovery program and for Spanish speakers in Descubriendo la Lectura also were compared.

A total of 243 children were served in Descubriendo la Lectura; of that number, 165 received a full program of intervention. The number of children who received a full program that successfully discontinued at the average level of their peers was 129, for a proportion of 78% as the discontinuing rate for children served in Descubriendo la Lectura. The discontinuing rate for children served in Reading Recovery, as reported in Research Question 1 (above), was 74%.

The means for number of lessons received by discontinued and not discontinued Descubriendo la Lectura students were 65.34 (N=129) and 87.31 (N=36) respectively. The means for number of lessons received by discontinued and not discontinued English Reading Recovery students were 62.76 (N=1788) and 85.58 (N=630) respectively (as reported above for Research Question 1).

For Research Question 4, data were analyzed to determine the reading progress of Spanish speakers in the Descubriendo la Lectura program and to compare their progress with children in the Reading Recovery program. Comparisons were made by analyzing entry and exit gains on three sub-tasks of the Observation Survey (Clay, 1993a). As part of this question, the

change on all three measures from exit assessment to end-of-year assessment for children who discontinued before April 1 was analyzed, also.

For the Spanish speakers in Descubriendo la Lectura who discontinued, the mean for **Writing Vocabulary** increased from 3.83 (N=129) in the fall, to 38.20 (N=126) at discontinuing. This result is statistically significant at the p<.0001 level. For the Spanish Descubriendo la Lectura not discontinued group, the mean for Writing Vocabulary increased from 1.11 (N=36) in the fall, to 19.55 (N=33) in the spring. This result is statistically significant at the p<.0001 level. For Descubriendo la Lectura students who discontinued prior to April 1, the mean for Writing Vocabulary increased from 2.15(N=40) in the fall, to 34.48 (N=40) at discontinuing; they subsequently progressed, without further intervention, to an end-of-year mean score of 40.43 (N=37).

For the Descubriendo la Lectura discontinued group, the mean for **Hearing Sounds in Words** increased from 6.56 (N=129) in the fall, to 36.87 (N=126) at discontinuing. This result is statistically significant at the p<.0001 level. For the Descubriendo la Lectura not discontinued group, the mean for Hearing Sounds in Words increased from 1.08 (N=36) in the fall, to 25.88 (N=33) in the spring. This result is statistically significant at the p<.0001 level. For Descubriendo la Lectura students who discontinued prior to April 1, the mean for Hearing Sounds in Words increased from 4.45 (N=40) in the fall, to 36.83 (N=40) at discontinuing; they subsequently progressed, without further intervention, to an end-of-year mean score of 37.57 (N=37).

For the Descubriendo la Lectura discontinued group, the mean for **Text Reading** increased from 0.43 (N=129) in the fall, to 14.55 (N=126) at discontinuing. This result is statistically significant at the p<.0001 level. For the Descubriendo la Lectura not discontinued group, the mean for Text Reading increased from 0.17 (N=36) in the fall, to 5.03 (N=33) in the spring. This result also is significant at the p<.0001 level. For Descubriendo la Lectura students who discontinued prior to April 1, the mean for Text Reading increased from 0.28 (N=40) in the fall, to 11.18 (N=40) at discontinuing; they subsequently progressed, without further intervention, to an end-of-year mean score of 18.32 (N=37).

For comparison of gains made by discontinued Spanish speaking children in Descubriendo la Lectura to gains made by discontinued children in Reading Recovery on each of the three sub-tasks, mean gain scores were: for Reading Recovery Writing Vocabulary, 38.91 and for Descubriendo la Lectura Writing Vocabulary, 34.37; for Reading Recovery Hearing Sounds in Words, 24.44 and for Descubriendo la Lectura Hearing Sounds in Words, 30.31; for Reading Recovery Text Reading, 13.17, and for Descubriendo la Lectura Text Reading, 14.12.

Study Three: Research Questions 5 & 6

For Research Question 5, data were analyzed to determine the discontinuing rate of English Language Learners in the Reading Recovery program compared to the discontinuing rate of native English speakers in the Reading Recovery program. As part of this question, the number of lessons for native English speakers and English Language Learners in Reading Recovery were compared, also.

A total of 1409 English Language Learners were served in Reading Recovery (delivered in English); of that number, 885 received a full program of intervention. The number of English Language Learners who received a full program that successfully discontinued at the average level of their peers was 667, for a proportion of 75% as the discontinuing rate for English Language Learners served in Reading Recovery. The discontinuing rate for English-only speaking children served in Reading Recovery, as reported in Research Question 1 (above), was 74%.

The means for number of lessons received by discontinued and not discontinued English language learners in Reading Recovery were 66 (N=667) and 84.92 (N=218) respectively. The means for number of lessons received by discontinued and not discontinued

English-only Reading Recovery students were 62.76 (N=1788) and 85.58 (N=630) respectively (as reported above for Research Question 1).

For Research Question 6, data were analyzed to determine the progress of English Language Learners in the Reading Recovery program as compared to the progress of native English speakers in the Reading Recovery program. Comparisons were made by analyzing differences between entry and exit scores on the Observation Survey (Clay, 1993a). As part of this question, changes on all three measures from exit testing to end-of-year testing for students who were discontinued before April 1 were analyzed as well.

For English Language Learners in Reading Recovery who discontinued, the mean for **Writing Vocabulary** increased from 7.21 (N=667) in the fall, to 48.61 (N=647) at discontinuing. This result was statistically significant at the p<.0001 level. For English Language Learners in Reading Recovery who did not discontinue, the mean for Writing Vocabulary increased from 2.17 (N=218) in the fall, to 30.95 (N=205) in the spring. This result was statistically significant at the p<.0001 level. For English Language Learners who discontinued prior to April 1, the mean for Writing Vocabulary increased from 3.54 (N=237) in the fall, to 43.11 (N=244) at discontinuing; they subsequently progressed, without further intervention, to an end-of-year mean score of 51.84 (N=236).

For English Language Learners in Reading Recovery who discontinued, the mean for **Hearing Sounds in Words** increased from 8.62 (N=666) in the fall, to 34.43 (N=647) at discontinuing. This result was statistically significant at the p<.0001 level. For English Language Learners in Reading Recovery who did not discontinue, the mean for Hearing Sounds in Words increased from 2.33 (N=218) in the fall, to 27.74 (N=204) in the spring. This result was statistically significant at the p<.0001 level. For English Language Learners who discontinued prior to April 1, the mean for Hearing Sounds in Words increased from 4.45 (N=236) in the fall, to 33.80 (N=243) at discontinuing; they subsequently progressed, without further intervention, to an end-of-year mean score of 35.04 (N=236).

For English Language Learners in Reading Recovery who discontinued, the mean for **Text Reading** increased from 0.86 (N=664) in the fall, to 14.31 (N=648) at discontinuing. This result was statistically significant at the p<.0001 level. For English Language Learners in Reading Recovery who did not discontinue, the mean for Text Reading increased from 0.23 (N=218) in the fall, to 5.43 (N=205) in the spring. This result also was significant at the p<.0001 level. For English Language Learners who discontinued prior to April 1, the mean for Text Reading increased from 0.33 (N=236) in the fall, to 11.27 (N=244) at discontinuing; they subsequently progressed, without further intervention, to an end-of-year mean score of 16.73 (N=236).

For comparison of gains made by discontinued English Language Learners in Reading Recovery to gains made by discontinued English-only speaking children in Reading Recovery on each of the three sub-tasks, mean gain scores were: for English-only children in Reading Recovery on Writing Vocabulary, 38.91 and for English Language Learners in Reading Recovery on Writing Vocabulary, 41.40; for English-only children in Reading Recovery on Hearing Sounds in Words, 24.44 and for English Language Learners in Reading Recovery on Hearing Sounds in Words, 25.81; for English-only children in Reading Recovery on Text Reading, 13.17, and for English Language Learners in Reading Recovery on Text Reading, 13.45.

Discussion of Results

Overall, 76% of children who received full Reading Recovery or Descubriendo la Lectura programs reached the average reading level of their classmates and were successfully discontinued from the program. Children served in both Reading Recovery and Descubriendo la Lectura discontinued at comparable rates. Of children who received full programs in Reading Recovery, 74% of the English-only speaking and 75% of English Language Learners discontinued. For Spanish-speaking children who received full programs in Descubriendo la Lectura, 78% discontinued. Moreover, the average number of lessons needed for discontinuing for each of these groups was similar, ranging between 62.76 and 66 lessons.

Writing Vocabulary. At the end of the year, English-only speaking children who discontinued from Reading Recovery had a mean score on Writing Vocabulary of 47.26; the random sample students from English-speaking classrooms in California had a mean score 42.02. Spanish-only speaking children who discontinued from Descubriendo la Lectura had a mean score of 38.20; the random sample students from Spanish-speaking classrooms in California had a mean score of 29.04. The mean score for English Language Learners was 48.61 on this task; the random sample students from English-speaking classrooms in California had a mean score 42.02. Thus, all three groups of discontinued children out-performed random sample children in California. Moreover, end-of-year results reveal that children who discontinued in all three groups achieved statistically significant growth over the time of the intervention.

Reading Recovery and Descubriendo la Lectura children who did not discontinue also improved from entry to end-of-year assessment. The mean for not-discontinued English-only speaking children in Reading Recovery went from 2.35 to 29.13; the mean for not-discontinued Spanish-only speaking children in Descubriendo la Lectura went from 1.11 to 19.55; and, the mean for not-discontinued English Language Learners in Reading Recovery went from 2.17 to 30.95. These results indicate that many of these children learned a great deal about how to learn words.

Hearing (and Recording) Sounds in Words. As on the previous task, all groups of children who discontinued from Reading Recovery or Descubriendo la Lectura outperformed random sample children on the Hearing Sounds in Words task, a skill needed in learning to write and a literacy task that is correlated with ease of literacy acquisition. At the end of the year, English-only speaking children who discontinued from Reading Recovery had a mean score of 34.43 out of a possible 37; the random sample students from English-speaking classrooms in California had a mean score on Hearing Sounds in Words of 31.72. Spanish-only speaking children who discontinued from Descubriendo la Lectura had an end-of-year mean score of 36.87 out of a possible 39; the random sample students from Spanish-speaking classrooms in California had a mean score on Hearing Sounds in Words of 33.22. The mean score at end-of-year for English Language Learners in Reading Recovery was 34.43 on this task; the random sample students from English-speaking classrooms in California had a mean score on Hearing Sounds in Words of 31.72. Additionally, when final results are compared with entry scores of 9.99 (English-only), 6.56 (Spanish-only), and 8.62 (English Language Learners), all groups made statistically significant gains over the time of the intervention.

Reading Recovery and Descubriendo la Lectura children who did not discontinue also made significant gains on Hearing Sounds in Words. At the end of the year, their mean scores were 27.24 (English-only), 25.88 (Spanish-only), and 27.74 (English Language Learners). While these scores are lower than the means for the discontinued groups and the means for the random sample groups, significant gains were made by these groups who began with very low mean scores on this task: 2.18, 1.08, and 2.33, respectively. These results indicate that significant gains were made over-all by the not discontinued children in a critical ability related to literacy acquisition.

Text Reading. At the end of the year, the mean Text Reading scores for children who discontinued from Reading Recovery and Descubriendo la Lectura exceeded the mean Text Reading scores of the random sample students in California. English-only speaking children who

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discontinued from Reading Recovery had a mean Text Reading level of 14.36; the random sample students from English-speaking classrooms in California had a mean Text Reading level of 13.79. Spanish-only speaking children who discontinued from Descubriendo la Lectura had a mean Text Reading level of 14.55; the random sample students from Spanish-speaking classrooms in California had a mean Text Reading level of 10.32. The mean Text Level for students designated as English Language Learners who discontinued from Reading Recovery was 14.31; the random sample of children from English-speaking classrooms used for comparison purposes for English Language Learners (as given above) was 13.79.

Compared with entry Text Reading levels of 1.19 for English-only speaking children and .43 for Spanish-only speaking children, end-of-year results for children who discontinued in these two groups of students were statistically significant in terms of gains achieved.

Children who received a full program of Reading Recovery or Descubriendo la Lectura but who were not discontinued also made progress in reading. Not-discontinued English-only speaking children had a mean Text Reading level of 5.63 at end-of-year; not-discontinued Spanish-only speaking children had a mean Text Reading level of 5.03 at end-of-year; and, not-discontinued English Language Learners had a mean Text Reading level of 5.43 at end-of-year. However, for each group, the mean fell below the mean for discontinued children and the mean of the appropriate random sample. Nonetheless, the progress achieved in Text Reading by not discontinued children was significant for all three groups of students.

Children in all three groups who discontinued prior to April 1 continued to make progress, after exit from the program and without further intervention, on the three measures of Writing Vocabulary, Hearing Sounds in Words, and Text Reading. For English-only speaking children, mean gain scores from exit to end-of-year were: on Writing Vocabulary, 7.72; on Hearing Sounds in Words, .57; and, on Text Reading, 4.64. For Spanish-only speaking children in Descubriendo la Lectura, mean gain scores from exit to end-of-year were: on Writing Vocabulary, 5.95; on Hearing Sounds in Words, .74; and, on Text Reading, 7.14. For English Language Learners in Reading Recovery, mean gain scores from exit to end-of-year were: on Writing Vocabulary, 8.73; on Hearing Sounds in Words, 1.24; and, on Text Reading, 5.46.

Summary of Results

On the Observation Survey sub-tasks of Writing Vocabulary, Hearing Sounds in Words, and Text Reading, English-only speaking first-grade students, Spanish-only speaking first-grade students, and first-grade students designated as English Language Learners who achieved acceleration to the average of their classrooms and therefore were "discontinued" from Reading Recovery/Descubriendo la Lectura, outperformed random sample students at the end of first grade. The effect size for these groups is more significant because the random samples were drawn from classrooms after excluding the students who were initially designated as the lowest achieving students. Overall, 76% of children who received a full program of intervention in Reading Recovery/Descubriendo la Lectura discontinued in approximately 65 days, or 32.5 hours, of tutoring.

Children who discontinued prior to April 1 were able to benefit from classroom instruction as indicated by the subsequent growth they achieved from time of exit to end-of-year testing, during which time they received no further tutorial intervention. Of the three sub-tasks, the area of greatest continued growth was children's ability to read continuous text as measured by the Text Reading sub-task. Two groups, English-only speaking children and English Language Learners in Reading Recovery, exited at a mean score that indicated a Primer level of reading; at end-of-year, they had progressed to a first-grade reading level. Spanish-only speaking children in Descubriendo la Lectura exited at a mean score that indicated a Primer level of reading; at end-of-year, they had progressed to a second-grade reading level.

Conclusions

During the 1993-94 school year in California, Reading Recovery/Descubriendo la Lectura were effective successful short-term interventions for three populations of first graders at-risk: English-only speaking children in English-speaking classrooms; Spanish-only speaking children in Spanish-speaking classrooms; and, children in English speaking classrooms who were designated as English Language Learners. In end-of-year testing, children in these three populations who were successfully discontinued from Reading Recovery/Descubriendo la Lectura intervention outperformed random sample students selected from the same schools where Reading Recovery/Descubriendo la Lectura was offered, on three authentic measures of literacy development: Writing Vocabulary, Hearing Sounds in Words, and Text Reading. The effect size for the Reading Recovery/Descubriendo la Lectura groups is more significant because the random samples were drawn from classrooms from which children initially designated as lowest-achieving were excluded. Thus, the Reading Recovery/Descubriendo la Lectura students' (drawn from the lowest 20%) progress was compared with random sample children who were initially designated in a higher-achieving group.

Moreover, among the three groups of children who discontinued in Reading Recovery/Descubriendo la Lectura, no significant differences were observed in year-end outcomes for the three measures. That is, the average end-of-year scores on Writing Vocabulary, Hearing Sounds in Words, and Text Reading were comparable across groups of discontinued children.

Additionally, even for children who received a full Reading Recovery or Descubriendo la Lectura program but who did not discontinue, Reading Recovery/Descubriendo la Lectura tutoring seemingly contributed to their literacy learning and particularly to their ability to Hear Sounds in Words; on this measure, their end-of-year mean scores were similar to the means for the random sample.

The power of the program may best be observed in the end-of-year scores for children who discontinued before April 1. For all three groups, subsequent gains achieved after release from the program validate the theory of developing a self-extending system of literacy learning whereby children can continue to learn more about reading from classroom instruction alone.

Questions have been raised about the efficacy of early literacy intervention programs for diverse populations of children. Particular questions have been raised with respect to English language learners receiving intervention in English when they are not yet proficient in English. These questions are particularly relevant in California, where 66% of the nation's second language learners reside. These studies did not attempt to determine language choice for literacy instruction; sufficient research studies have been conducted which address this issue (see Ramirez, Yuen, & Ramey, 1991; Cummins, 1989; Krashen & Biber, 1988). However, when English Language Learners are receiving classroom literacy instruction in English, this research has demonstrated that English Language Learners are well served by the "safety net" literacy intervention of Reading Recovery.

This study examined six questions about the comparison of progress of children in each of three groups of students in California schools. For the discontinued children in all three groups, no significant differences in achievement across the three measures were observed; all groups were successful in learning to read and write through short-term one-on-one intervention. Children in all groups who discontinued before April 1 achieved continued progress on all three measures of literacy development. Therefore, on the strength of the data cited herein, we conclude that Reading Recovery and Descubriendo la Lectura are effective interventions which are appropriate and relevant to the needs of high risk first grade children in California's diverse school population.

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Recommendations

Based on the results of these studies, we recommend the following:

1. that further analysis of this data be conducted using ANOVA within and among groups in order to address the range of standard deviations that characterizes the data (only t-tests of differences were reported in this report);

2. that this research be replicated in order to see if similar results are achieved;

3. that a random sample be established for English Language Learners in California;

4. that all first-grade children at risk of learning to read and write have access to Reading Recovery or Descubriendo la Lectura tutoring, or to other early interventions that demonstrate similar results in the time-frames described;

5. that selection of English Language Learners for Reading Recovery intervention continue to be based on a level of understanding of English as required for the Observation Survey to be administered;

6. that a longitudinal study be undertaken to determine if the gains made by these three populations of children are maintained into grades two and three.

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